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10/501,399

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Koji Okomori

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT

PAPER NUMBER

1762

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/501,399

Applicant(s)

OKOMORI ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5-7 and 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Claims 1, 3-4 and 8 are canceled

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 13, 2007 has been entered.

The amendment filed with the RCE submission of April 13, 2007 has been received and entered. With the entry of the amendment, claims 1, 3-4 and 8 are canceled, and claims 2, 5-7 and 9-18 (including new claims 15-18) are pending for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2, 5-7 and 9-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(1) Independent claims 2, 5, 13 and 14 have been amended to provide that the "coating color is applied by a gate roll coater". However, the only reference to a "gate roll coater" in the disclosure as originally filed is in reference to providing base papers precoated with materials by gate roll coaters, among other coating methods, to be used in the present invention (page 12, lines 12-16 of the specification). However, this reference does indicate that applicant was aware of gate roll coaters and could have claimed them or used the terminology of "gate roll coater" as to the present invention if it had been desired. Applicant further argues at the REMARKS section of the April 13, 2007 amendment that the described use in the specification of an applicator roll, an inner roll and an outer roll is a gate roll coater as known in the art, citing a Japan Tappi Journal article as to this effect. The Examiner has reviewed this material, however, it does not provide evidence that the described roller system in the specification must be a gate roll coater. The translation of the Tappi Journal article indicates that a gate roll coater can use a three roll coater system. However, there is no indication that that is the only type of multi (or three) roll coater system usable to print paper. In fact, in the section marked of "6. Transfer Roll Coater", several systems are described as using a "plurality of rolls". As well the present specification, at page 4, lines 16-20 teaches "Transfer roll coaters used in film transfer coatings are designed in such a manner that a coating color is supplied onto a nip between an inner roll outside an applicator roll and

outer roll further outside.” This indicates that the generic “transfer roll coater” can have at least three rolls as described, not just the specific gate roll coater. In fact, the Examiner notes that the Massey roll coater system can specifically have “applicator”, “inner” and “outer” positioned rollers. See Massey (US 2185859), Figures 2 and 3; and Rasmussen et al (US 3413139) Figure 2 (device marked “Massey” coater). As well, the Tappi Journal article indicates the maximum gate roll coater speed of about 1000 m/min (see Table 1) not over 1100 as claimed. Therefore, there is no support in the disclosure as originally filed for using a specific “gate roll coater” and there is further no requirement that a system with an applicator, inner and outer roll is necessarily a “gate roll coater”. As a result, the specific claiming of a “gate roll coater” is new matter.

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Objections

4. Claims 15 and 17 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

New claims 15 and 17 claim that “the gate roll coater includes an applicator roll, an inner roll and an outer roll”. However, according to applicant in the REMARKS at page 6 of the April 13, 2007 amendment, a gate roll coater would include these features

by definition, and therefore, the claim is not further limiting of the "gate roll coater" provided in the parent claims from which claims 15 and 17 depend.

5. Claim 18 is objected to because of the following informalities: in claim 18, line 2, "50-90%" is given as the range. It appears that applicant meant "50-95%" as in claim 16 and the specification at page 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The rejection of claims 2, 5-7 and 9-14 under 35 U.S.C. 102(b) as being anticipated by Wurster et al (US 6197155) is withdrawn due to applicant's amendments of April 13, 2007.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 5-7, 9-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wurster et al (US 6197155) in view of Hayasaka et al (US 5972167).

Claim 2: Wurster teaches a method for producing coated paper for printing. Column 1, lines 3-5. A coating color containing a pigment and an adhesive (binder) is applied to a base paper. Column 2, lines 50-65 and column 3, lines 5-15. The coating color contains, for example, 1 wt % polyvinyl alcohol (PVA) in relation to coating pigment (1 part by weight PVA to 100 parts by weight of the pigment). Column 2, lines 60-65 and column 6, lines 43-45. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35. The coating weight can be 7 g/m². Column 4, lines 40-45. The coated paper can be used for offset printing. Column 1, lines 3-5.

Claim 5: Wurster teaches a process as described in claim 2. The coated paper is for offset printing. Column 1, lines 3-5. The polyvinyl alcohol can be in addition to other adhesive, and thus serves as an auxiliary to the extent claimed. Column 2, lines 55-68 and column 3, lines 20-40. The amount of starch present can be 0 percent, thus providing less than 2.0 parts by weight of starch as an adhesive. Column 3, lines 30-40. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press.

Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35.

Claim 6: the coating color can be 18 weight percent adhesive (binder) in relation to coating pigment (18 parts by weight of adhesive based on 100 parts by weight of the pigment) or less. Column 3, lines 10-25.

Claim 7: the coating color can be 20 g/ m² total weight, on both sides, with the coating mass spread roughly uniformly on both coat applications, thus providing roughly 10 g/ m² on each side of the base paper, which is more than 7 g/ m² on each side. Column 4, lines 45-55.

Claim 9: a coated paper for printing is produced by the method according to claim 5. Column 1, lines 3-5.

Claims 10 and 11: the coating color can be 18 weight percent adhesive (binder) in relation to coating pigment (18 parts by weight of adhesive based on 100 parts by weight of the pigment). Column 3, lines 10-25.

Claim 12: the coating color can be 65 weight percent solids, for example. Column 4, lines 20-25.

Claim 13: Wurster teaches a method for producing coated paper for printing. Column 1, lines 3-5. A coating color containing a pigment and an adhesive (binder) is applied to a base paper. Column 2, lines 50-65 and column 3, lines 5-15. The coating color contains, for example, 1 wt % polyvinyl alcohol (PVA) in relation to coating pigment (1 part by weight PVA to 100 parts by weight of the pigment). Column 2, lines

60-65 and column 6, lines 43-45. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35. The coating weight can be 7 g/m². Column 4, lines 40-45. The coated paper can be used for offset printing. Column 1, lines 3-5.

Claim 14: Wurster teaches a process as described in claim 13. The coated paper is for offset printing. Column 1, lines 3-5. The polyvinyl alcohol can be in addition to other adhesive, and thus serves as an auxiliary to the extent claimed. Column 2, lines 55-68 and column 3, lines 20-40. The amount of starch present can be 0 percent, thus providing less than 2.0 parts by weight of starch as an adhesive. Column 3, lines 30-40. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35.

Wurster teaches all the features these claims except that a "gate roll coater" system is used (with application, inner and outer rolls) and the coating speed of 1100 m/min or more.

However, Hayasaka teaches that it is well known to use transfer roll coating processes to apply coating color (of pigment and adhesive) to a paper substrate to provide desirable paper for printing. Column 6, lines 5-30, column 7, lines 10-15 and

column 3, lines 30-35. Hayasaka teaches that desirable transfer roll coating processes include metering size press coaters and gate roll coaters. Column 6, lines 30-35. The gate roll coaters are described as using two gate rolls (which would provide an inner an outer roll) to supply coating color to the applicator roll. Column 6, lines 30-45.

Hayasaka further teaches that the relative speed of the rolls in the gate roll coater system are controlled to provide desirable metering and application of coating. Column 6, lines 30-60. The gate roll coater system can be used to apply coating weight of 5-15 g/m² per side. Column 6, lines 45-65. Hayasaka further teaches to use coating speeds of about 600 to about 1500 m/min, preferably between about 1000 and about 1500 m/min. Column 7, lines 1-5.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wurster to use a gate roll applicator system and coating speed of 1100 m/min or more as suggested by Hayasaka with an expectation of providing a desirable and speedy transfer roll coating system because Wurster teaches that roller application systems can be used (not limited to Massey coaters) and that metering size press systems can be used to apply a coating system of pigments and adhesive to a paper surface and Hayasaka teaches that a desirable roll coating system for applying a coating system of pigments and adhesive to a paper surface includes gate roll coaters and metering size presses and that such a gate roll coater would use an inner, outer and application roll and that desirable coating speeds for such systems would be about 1000 to about 1500 m/min, and as to the specific speed of greater than

1100 m/min, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

9. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wurster in view of Hayasaka as applied to claims 2, 5-7, 9-15 and 17 above, and further in view of Japan 11-050392 (hereinafter '392).

Wurster in view of Hayasaka teach all the features of these claims except the peripheral speed of the inner and outer roll to the applicator roll being 50-95% (claim 16) or 50-90% (claim 18). Hayasaka does teach that the relative speed of the rolls in the gate roll coater system are controlled to provide desirable metering and application of coating. Column 6, lines 30-60.

However, '392 teaches that when making coated paper for offset printing by coating with pigment and adhesive, it is desirable to use a gate roll coater with an applicator roll, an inner roll and an outer roll. See the abstract. Furthermore, it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll. See the abstract. The adhesive can induce polyvinyl alcohol. Paragraph [0017]. The coating speed can be 1200 m/min. Paragraph [0026].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wurster in view of Hayasaka provide that the peripheral speed of the inner and outer roll to the applicator roll can desirably be 50-80% of the

✓ applicator roll as suggested by '392 with an expectation of providing a desirable and speedy transfer roll coating system because Wurster in view of Hayasaka suggests gate roll coating of paper with pigment and adhesive for offset ^{pnn}coating with Hayasaka teaching that the relative speed of the rolls in the gate roll coater system are controlled to provide desirable metering an application of coating and '392 teaching gate roll ✓ coating of paper with pigment and adhesive for offset ^{pnn}coating and that it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll.

10. Claims 2, 5-7 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wurster et al (US 6197155) in view of Japan 11-050392 (hereinafter '392).

Claim 2: Wurster teaches a method for producing coated paper for printing. Column 1, lines 3-5. A coating color containing a pigment and an adhesive (binder) is applied to a base paper. Column 2, lines 50-65 and column 3, lines 5-15. The coating color contains, for example, 1 wt % polyvinyl alcohol (PVA) in relation to coating pigment (1 part by weight PVA to 100 parts by weight of the pigment). Column 2, lines 60-65 and column 6, lines 43-45. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35. The coating weight can be 7 g/m². Column 4, lines 40-45. The coated paper can be used for offset printing. Column 1, lines 3-5.

Claim 5: Wurster teaches a process as described in claim 2. The coated paper is for offset printing. Column 1, lines 3-5. The polyvinyl alcohol can be in addition to other adhesive, and thus serves as an auxiliary to the extent claimed. Column 2, lines 55-68 and column 3, lines 20-40. The amount of starch present can be 0 percent, thus providing less than 2.0 parts by weight of starch as an adhesive. Column 3, lines 30-40. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35.

Claim 6: the coating color can be 18 weight percent adhesive (binder) in relation to coating pigment (18 parts by weight of adhesive based on 100 parts by weight of the pigment) or less. Column 3, lines 10-25.

Claim 7: the coating color can be 20 g/ m² total weight, on both sides, with the coating mass spread roughly uniformly on both coat applications, thus providing roughly 10 g/ m² on each side of the base paper, which is more than 7 g/ m² on each side. Column 4, lines 45-55.

Claim 9: a coated paper for printing is produced by the method according to claim 5. Column 1, lines 3-5.

Claims 10 and 11: the coating color can be 18 weight percent adhesive (binder) in relation to coating pigment (18 parts by weight of adhesive based on 100 parts by weight of the pigment). Column 3, lines 10-25.

Claim 12: the coating color can be 65 weight percent solids, for example. Column 4, lines 20-25.

Claim 13: Wurster teaches a method for producing coated paper for printing. Column 1, lines 3-5. A coating color containing a pigment and an adhesive (binder) is applied to a base paper. Column 2, lines 50-65 and column 3, lines 5-15. The coating color contains, for example, 1 wt % polyvinyl alcohol (PVA) in relation to coating pigment (1 part by weight PVA to 100 parts by weight of the pigment). Column 2, lines 60-65 and column 6, lines 43-45. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press. Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35. The coating weight can be 7 g/m². Column 4, lines 40-45. The coated paper can be used for offset printing. Column 1, lines 3-5.

Claim 14: Wurster teaches a process as described in claim 13. The coated paper is for offset printing. Column 1, lines 3-5. The polyvinyl alcohol can be in addition to other adhesive, and thus serves as an auxiliary to the extent claimed. Column 2, lines 55-68 and column 3, lines 20-40. The amount of starch present can be 0 percent, thus providing less than 2.0 parts by weight of starch as an adhesive. Column 3, lines 30-40. The coating color application method can be roll coating methods such as the Massey coater (which is inherently a transfer roll coater method) or a metering size press.

Column 4, lines 20-30. Moreover, Wurster teaches that the resulting paper is essentially independent of the type of coat application process. Column 4, lines 25-35.

Wurster teaches all the features these claims except that a "gate roll coater" system is used (with application, inner and outer rolls), the coating speed of 1100 m/min or more and the peripheral speed of the inner/outer roll to the applicator roll (claims 16, 18).

However, '392 teaches that when making coated paper for offset printing by coating with pigment and adhesive, it is desirable to use a gate roll coater with an applicator roll, an inner roll and an outer roll. See the abstract. Furthermore, it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll. See the abstract. The adhesive can induce polyvinyl alcohol. Paragraph [0017]. The coating speed can be 1200 m/min. Paragraph [0026].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wurster to use a gate roll applicator system and coating speed of 1200 m/min, for example, as suggested by '392 with an expectation of providing a desirable and speedy transfer roll coating system because Wurster teaches that roller application systems can be used (not limited to Massey coaters) to apply a coating system of pigments and adhesive to a paper surface and '392 teaches that a desirable roll coating system for applying a coating system of pigments and adhesive to a paper surface includes gate roll coaters and that such a gate roll coater would use an inner, outer and application roll and that desirable coating speeds for such systems

would be 1200 m/min. Furthermore, it would have been desirable to use such a system with a peripheral speed ratio of the inner/outer roll to the applicator roll of 50-80% as suggested by '392 as a desirable speed ratio when using such a gate roll system.

11. Claims 2, 5-7, 9-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saji et al (US 5030325) in view of Hershey et al (US 4154899) and Hayasaka et al (US 5972167).

Saji teaches a method of producing coated paper for printing. Column 2, lines 15-30 and column 1, lines 10-20. A coating color containing a pigment and an adhesive is applied on a base paper. Column 2, lines 15-30. The coating color can contain polyvinyl alcohol and starch as adhesives. Column 4, lines 10-30. The adhesive can be 5-50 wt parts per 100 wt parts pigment, preferably 10-30 wt parts adhesive per 100 wt parts pigment. Column 4, lines 25-35. The applied coating weight can be 50 g/m². Column 4, lines 60-65. The coating can be applied to the paper by various methods, such as blade coating, a roll coater, a reverse roll coater, a gravure coater, a size press coater etc. Column 4, lines 40-48. A coated paper is provided for printing. Column 2, lines 15-30 and column 1, lines 10-20. The coating color can be 40-75 wt% solids. Column 4, lines 45-55.

Saji teaches all the features of these claims except (1) the precise amounts of polyvinyl alcohol (claim 2), (2) the offset printing, (3) the amount of starch (claim 5), (4) the gate roll coater method, (5) the speed of coating of 1100 m/min or more.

However, Hershey teaches a method for producing coated paper for printing. Column 2, lines 15-30. A coating color containing a pigment and an adhesive is applied on a base paper. Column 2, lines 30-40. The coating color can contain 5-30 parts adhesive per 100 parts pigment. Column 5, lines 10-15. The coating color can contain 1.5 parts by weight of polyvinyl alcohol per 100 parts by weight of the pigment as part of the overall weight of adhesives. Column 12, lines 5-10 and 30-55 (Example 8). The PVA would be an auxiliary to other adhesives provided, as it is not the sole adhesive. Column 12, lines 30-55. The applied coating weight can be 12 lbs/ream ($> 7 \text{ g/m}^2$) (for example 10 lbs/ream is approx. 14.6 g/m^2). Column 3, lines 10-15. Hershey teaches to apply the coating by blade coating. Column 2, lines 15-25. The paper can be for offset printing. Column 2, lines 25-30. Hershey teaches that the paper was printed on using offset printing methods. Column 9, lines 5-20. The coating can also be 1.5 parts by weight of starch as an adhesive per 100 parts by weight of the pigment. Column 12, lines 5-10 and 30-55 (Example 8). The amount of adhesive can be less than 18 parts by weight per 100 parts by weight of the pigment (note Example 8, which has 15 parts by weight). Column 12, lines 5-10 and 30-55 (Example 8). A coated paper is produced. Column 2, lines 15-30.

Furthermore, Hayasaka teaches that it is well known to use transfer roll coating processes to apply coating color (of pigment and adhesive) to a paper substrate to provide desirable paper for printing. Column 6, lines 5-30, column 7, lines 10-15 and column 3, lines 30-35. Hayasaka teaches that desirable transfer roll coating processes

include metering size press coaters and gate roll coaters. Column 6, lines 30-35. The gate roll coaters are described as using two gate rolls (which would provide an inner and outer roll) to supply coating color to the applicator roll. Column 6, lines 30-45.

Hayasaka further teaches that the relative speed of the rolls in the gate roll coater

system are controlled to provide desirable metering and application of coating. Column 6, lines 30-60. The gate roll coater system can be used to apply coating weight of 5-15 g/m² per side. Column 6, lines 45-65. Hayasaka further teaches to use coating speeds of about 600 to about 1500 m/min, preferably between about 1000 and about 1500 m/min. Column 7, lines 1-5.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Saji to use the paper for offset printing and to use the starch and polyvinyl alcohol amounts suggested by Hershey in order to provide a desirable paper for a process such as offset printing, because Saji teaches that a desirable paper for printing is coated with pigments and adhesives that can include starch and polyvinyl alcohol, and Hershey teaches that desirable papers for printing made by coating with pigments and adhesives can be used in offset printing and that desirable amounts of starch and polyvinyl alcohol are 1.5 wt parts per 100 weight parts of pigment for each. It further would have been obvious to modify Saji in view of Hershey to use a gate roll coater as the film transfer method and to operate at a speed of 1100 m/min or more as suggested by Hayasaka with an expectation of achieving a desirable and speedy coating, as Saji teaches that a variety of roll coating (film transfer)

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and size press methods can be used and Hayasaka teaches that a desirable roll coating system for applying a coating system of pigments and adhesive to a paper surface includes gate roll coaters and metering size presses and that such a gate roll coater would use an inner, outer and application roll and that desirable coating speeds for such systems would be about 1000 to about 1500 m/min, and as to the specific speed of greater than 1100 m/min, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

12. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saji in view of Hershey and Hayasaka as applied to claims 2, 5-7, 9-15 and 17 above, and further in view of Japan 11-050392 (hereinafter '392).

Saji in view of Hershey and Hayasaka teach all the features of these claims except the peripheral speed of the inner and outer roll to the applicator roll being 50-95% (claim 16) or 50-90% (claim 18). Hayasaka does teach that the relative speed of the rolls in the gate roll coater system are controlled to provide desirable metering and application of coating. Column 6, lines 30-60.

However, '392 teaches that when making coated paper for offset printing by coating with pigment and adhesive, it is desirable to use a gate roll coater with an applicator roll, an inner roll and an outer roll. See the abstract. Furthermore, it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll. See the

abstract. The adhesive can induce polyvinyl alcohol. Paragraph [0017]. The coating speed can be 1200 m/min. Paragraph [0026].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Saji in view of Hershey and Hayasaka provide that the peripheral speed of the inner and outer roll to the applicator roll can desirably be 50-80% of the applicator roll as suggested by '392 with an expectation of providing a desirable and speedy transfer roll coating system because Saji in view of Hershey and Hayasaka suggests gate roll coating of paper with pigment and adhesive for offset

Wb ^{prin}
~~coating~~ with Hayasaka teaching that the relative speed of the rolls in the gate roll coater system are controlled to provide desirable metering an application of coating and '392
vb teaching gate roll coating of paper with pigment and adhesive for offset ^{prin}
~~coating~~ and that it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll.

13. Claims 2, 5-7 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saji et al (US 5030325) in view of Hershey et al (US 4154899) and Japan 11-050392 (hereinafter '392).

Saji teaches a method of producing coated paper for printing. Column 2, lines 15-30 and column 1, lines 10-20. A coating color containing a pigment and an adhesive is applied on a base paper. Column 2, lines 15-30. The coating color can contain polyvinyl alcohol and starch as adhesives. Column 4, lines 10-30. The adhesive can be 5-50 wt parts per 100 wt parts pigment, preferably 10-30 wt parts adhesive per 100 wt

parts pigment. Column 4, lines 25-35. The applied coating weight can be 50 g/m². Column 4, lines 60-65. The coating can be applied to the paper by various methods, such as blade coating, a roll coater, a reverse roll coater, a gravure coater, a size press coater etc. Column 4, lines 40-48. A coated paper is provided for printing. Column 2, lines 15-30 and column 1, lines 10-20. The coating color can be 40-75 wt% solids. Column 4, lines 45-55.

Saji teaches all the features of these claims except (1) the precise amounts of polyvinyl alcohol (claim 2), (2) the offset printing, (3) the amount of starch (claim 5), (4) the gate roll coater method, (5) the speed of coating of 1100 m/min or more, and (6) the peripheral speed ratio of the inner/outer roll to the applicator roll (claims 16, 18).

However, Hershey teaches a method for producing coated paper for printing. Column 2, lines 15-30. A coating color containing a pigment and an adhesive is applied on a base paper. Column 2, lines 30-40. The coating color can contain 5-30 parts adhesive per 100 parts pigment. Column 5, lines 10-15. The coating color can contain 1.5 parts by weight of polyvinyl alcohol per 100 parts by weight of the pigment as part of the overall weight of adhesives. Column 12, lines 5-10 and 30-55 (Example 8). The PVA would be an auxiliary to other adhesives provided, as it is not the sole adhesive. Column 12, lines 30-55. The applied coating weight can be 12 lbs/ream (> 7 g/m²) (for example 10 lbs/ream is approx. 14.6 g/m²). Column 3, lines 10-15. Hershey teaches to apply the coating by blade coating. Column 2, lines 15-25. The paper can be for offset printing. Column 2, lines 25-30. Hershey teaches that the paper was printed on using

offset printing methods. Column 9, lines 5-20. The coating can also be 1.5 parts by weight of starch as an adhesive per 100 parts by weight of the pigment. Column 12, lines 5-10 and 30-55 (Example 8). The amount of adhesive can be less than 18 parts by weight per 100 parts by weight of the pigment (note Example 8, which has 15 parts by weight). Column 12, lines 5-10 and 30-55 (Example 8). A coated paper is produced. Column 2, lines 15-30.

Furthermore, '392 teaches that when making coated paper for offset printing by coating with pigment and adhesive, it is desirable to use a gate roll coater with an applicator roll, an inner roll and an outer roll. See the abstract. Furthermore, it is desirable for the inner and outer roll speed to be 50-80% of the applicator roll. See the abstract. The adhesive can induce polyvinyl alcohol. Paragraph [0017]. The coating speed can be 1200 m/min. Paragraph [0026].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Saji to use the paper for offset printing and to use the starch and polyvinyl alcohol amounts suggested by Hershey in order to provide a desirable paper for a process such as offset printing, because Saji teaches that a desirable paper for printing is coated with pigments and adhesives that can include starch and polyvinyl alcohol, and Hershey teaches that desirable papers for printing made by coating with pigments and adhesives can be used in offset printing and that desirable amounts of starch and polyvinyl alcohol are 1.5 wt parts per 100 weight parts of pigment for each. It further would have been obvious to modify Saji in view of

Hershey to use a gate roll coater as the film transfer method and to operate at a speed of 1200 m/min as suggested by '392 with an expectation of achieving a desirable and speedy coating, as Saji teaches that a variety of roll coating (film transfer) methods can be used and '392 teaches that a desirable roll coating system for applying a coating system of pigments and adhesive to a paper surface includes gate roll coaters and that such a gate roll coater would use an inner, outer and application roll and that desirable coating speeds for such systems would be 1200 m/min. Furthermore, it would have been desirable to use such a system with a peripheral speed ratio of the inner/outer roll to the applicator roll of 50-80% as suggested by '392 as a desirable speed ratio when using such a gate roll system.

14. Yasuda et al (US 4301210) also notes the conventional use of gate roll coaters, size press and other coaters to coat pigment/adhesive coatings on paper. See column 2, lines 50-60.

Response to Arguments

15. Applicant's arguments with respect to claims 2, 5-7 and 9-18 have been considered but are moot in view of the new ground(s) of rejection.

As to the newly claimed "gate roll coater" and the coating speed, the Examiner has provided the references to Hayasaka and Japan 11-050392 cited in the rejections above.

The Examiner notes that while Wurster describes the use of a Massey roll coater, it is not limited to such roll coating methods (" . . . roller application devices such as the Massey coater. . ." -column 4, lines 25-26, emphasis added).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER